User Preference Prediction and Game Recommendation

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Questions to Address

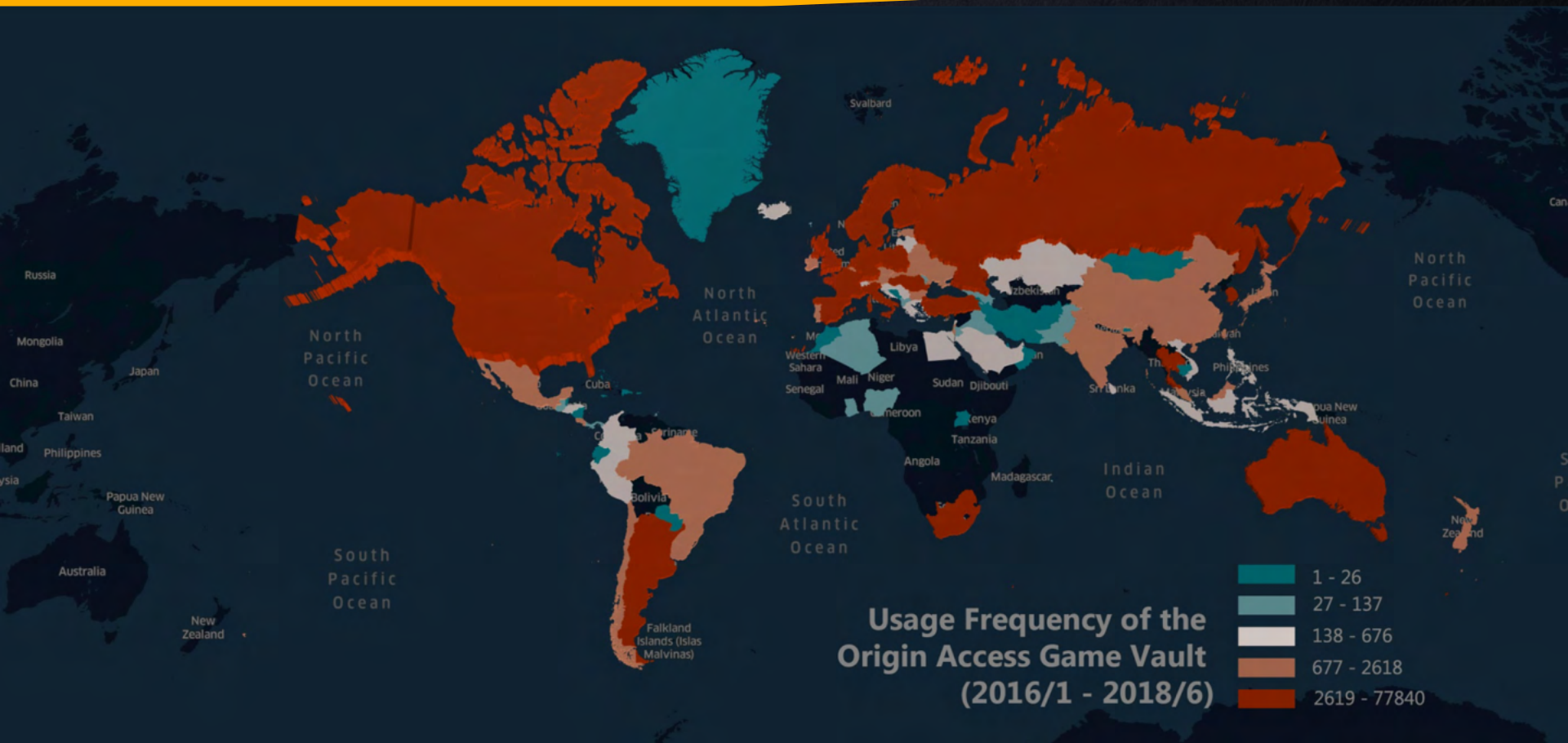*How to maximize individual game and subscription service ROI?*
How to get users convert from a free trial to monthly to annual subscriptions?
How to attract players to play new or more games (even non-EA titles)?

Objectives

To optimize the game recommendation system
and improve personalizations.

Spatial Distribution

Usage Frequency of the Origin Access Game Vault (2016/1 - 2018/6)

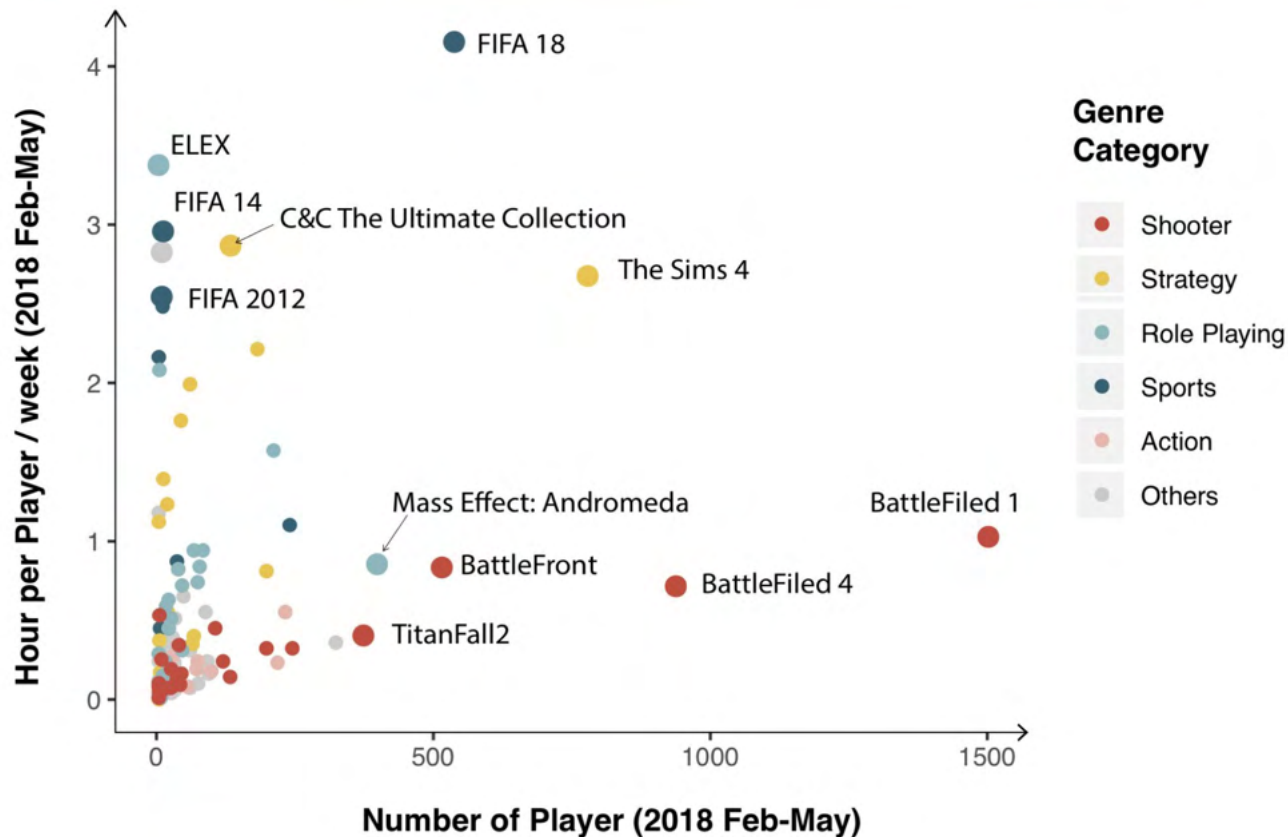|	
	1 - 26
	27 - 137
	138 - 676
	677 - 2618
	2619 - 77840

Game Attractiveness Timeline

- Role playing games is more popular before 2013.

- The attractiveness of shooter games stays constant over the years.
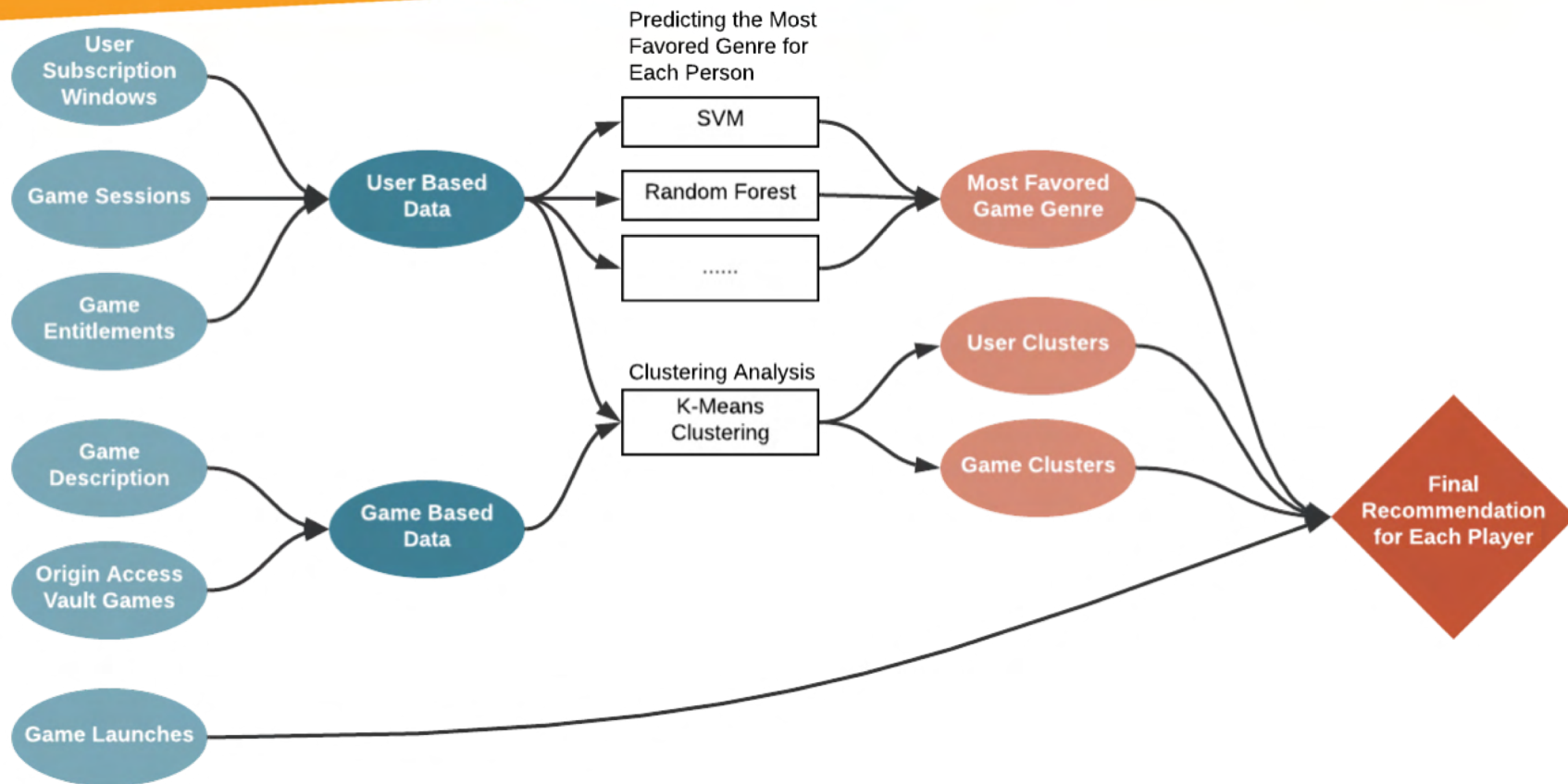
Game Popularity

- Users usually spend more times on sports games.

- Shooter games trend to attract more players.

Subscriber's Features

- Monthly subscribers have longer subscription duration than annual subscribers.

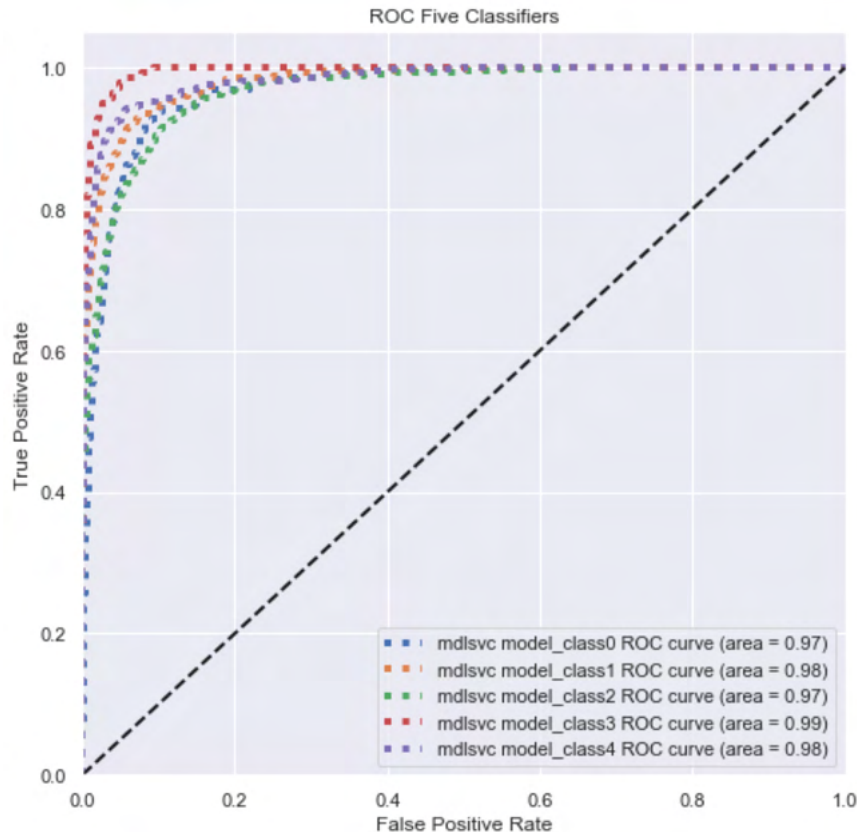- Fewer users are likely to choose annual subscription as their first subscription.

Cramer V Correlation between Variables
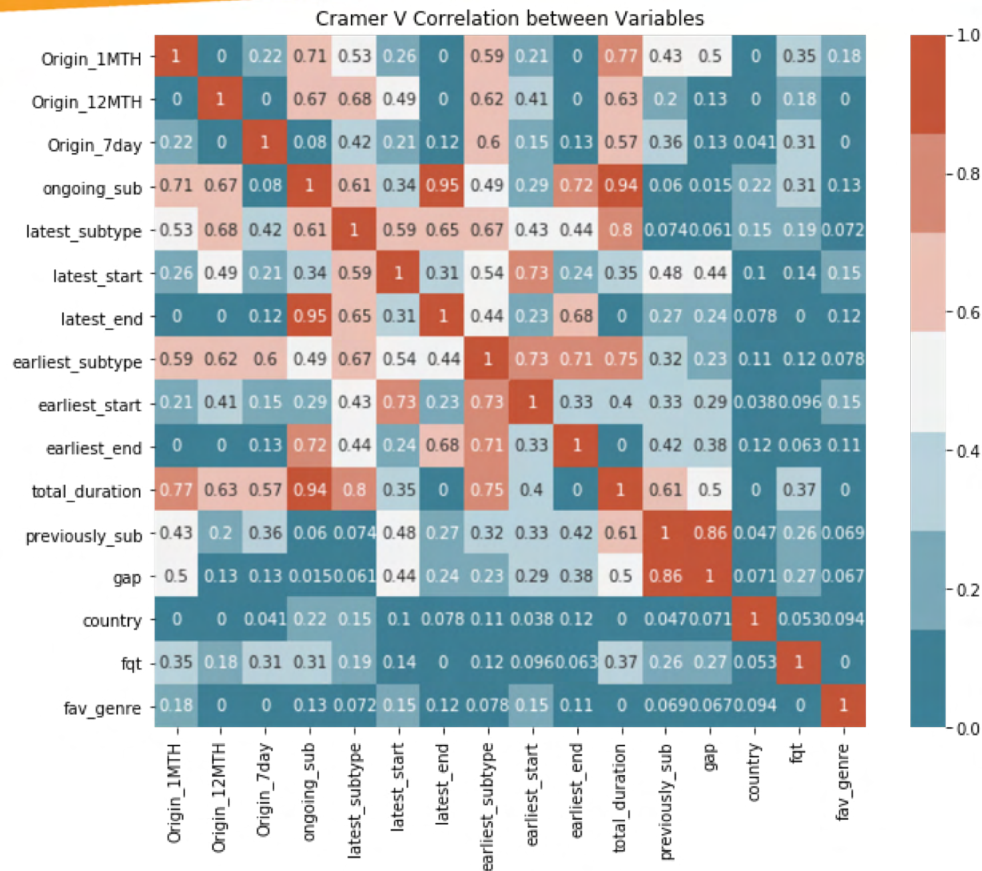
Method

Model Evaluation

- SVM: Macro AUC 0.978

- Random Forest: Macro AUC 0.961

Predicted genre / Actual genre	Action	Role Playing	Shooter	Sports	Strategy
Action	11	8	194	2	13
Role Playing	0	280	301	1	17
Shooter	0	7	2216	0	5
Sports	1	0	109	33	7
Strategy	0	22	210	0	358

ROC Five Classifiers

- mdlsvc model_class0 ROC curve (area = 0.97)
- mdlsvc model_class1 ROC curve (area = 0.98)
- mdlsvc model_class2 ROC curve (area = 0.97)
- mdlsvc model_class3 ROC curve (area = 0.99)
- mdlsvc model_class4 ROC curve (area = 0.98)
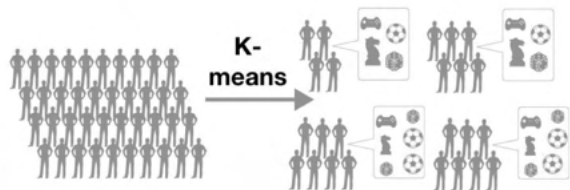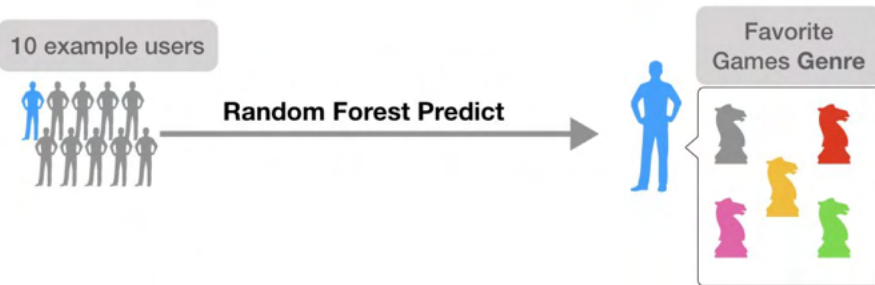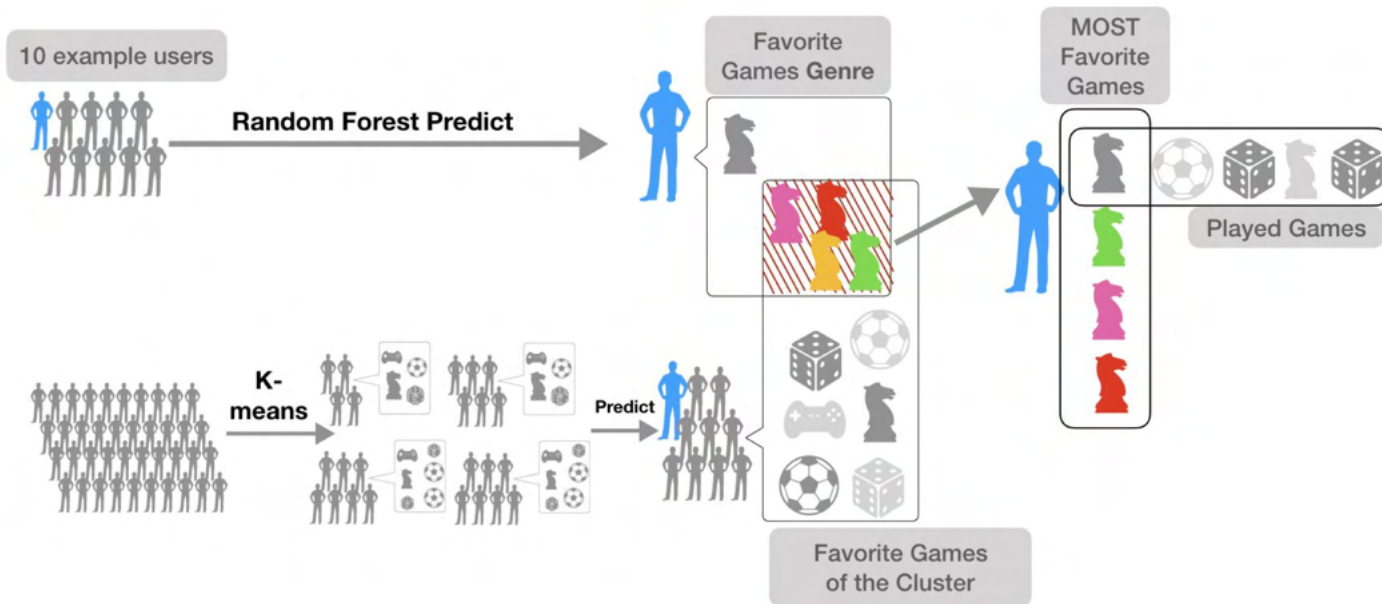
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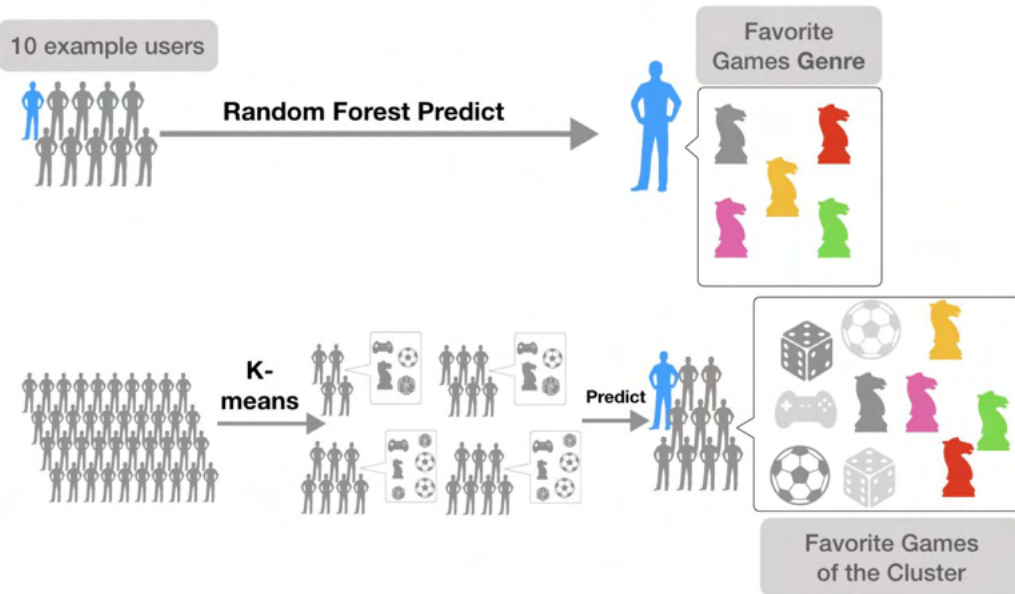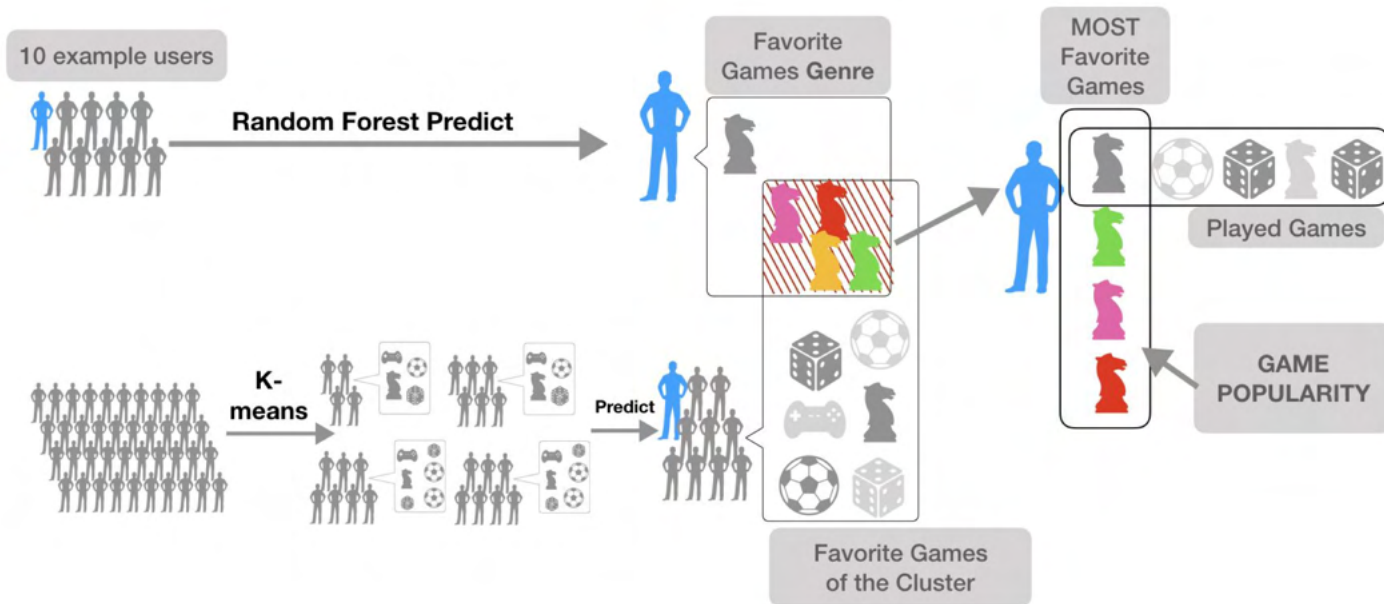
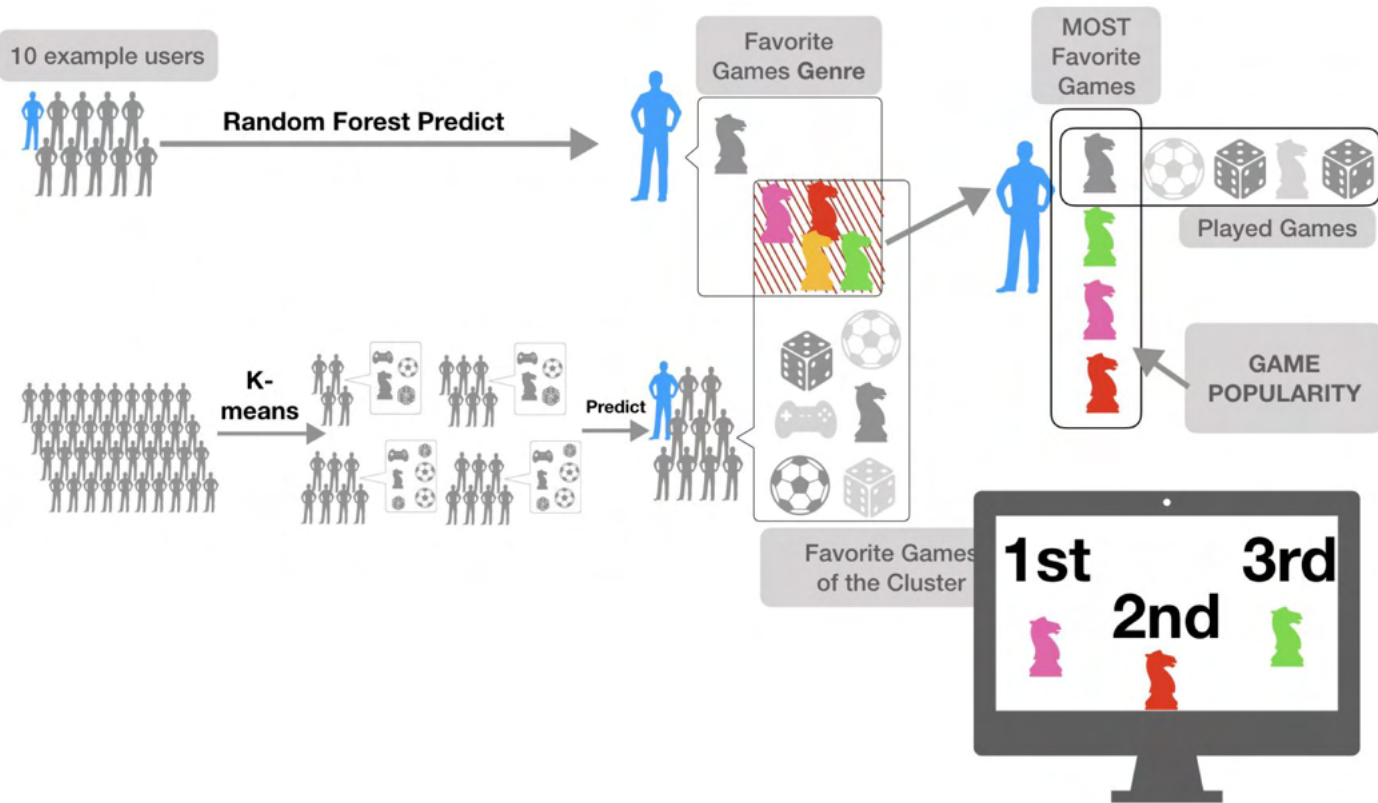# Method
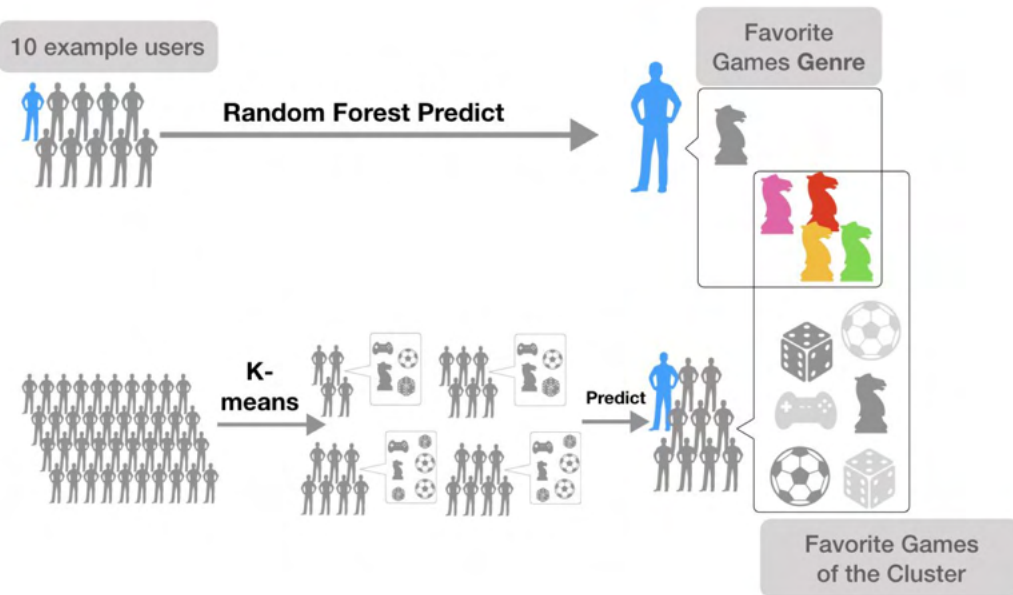
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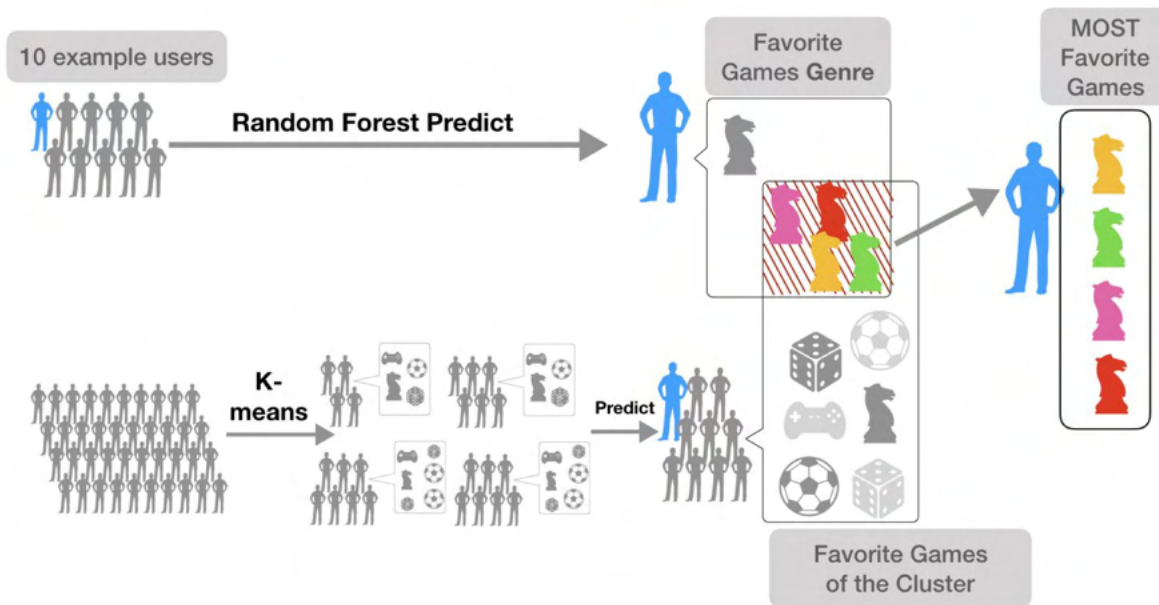
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Conclusion

Subscription Strategy

Increase the promotion efforts on the 1-month subscription.

Recommendation Strategy

New user
The most popular and attractive games in the past 1-year period.

Registered user
The games in one's possible preferred genre that have not been entitled by this user.

Next Steps…

- Balance the classes within the dataset
- Cross-validation of models to find the optimal parameters
- Try other models such as Stochastic Gradient Boosting
- Find external data that indicates game attributes